IBM Visual Cognitive Analytics

IARPA DIVA Proposer's Day
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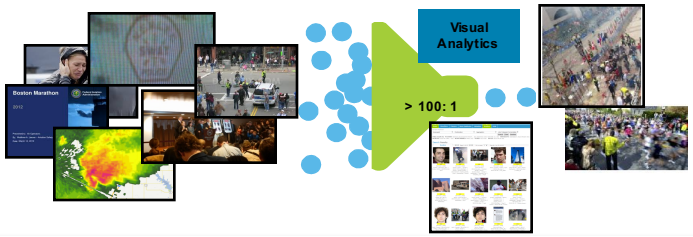
Unify Current IBM Analytics for Fixed Cameras and Photos with more Sophisticated Video Analysis for Body-Worn and Mobile Cameras

Today – Fixed Camera or Static Images

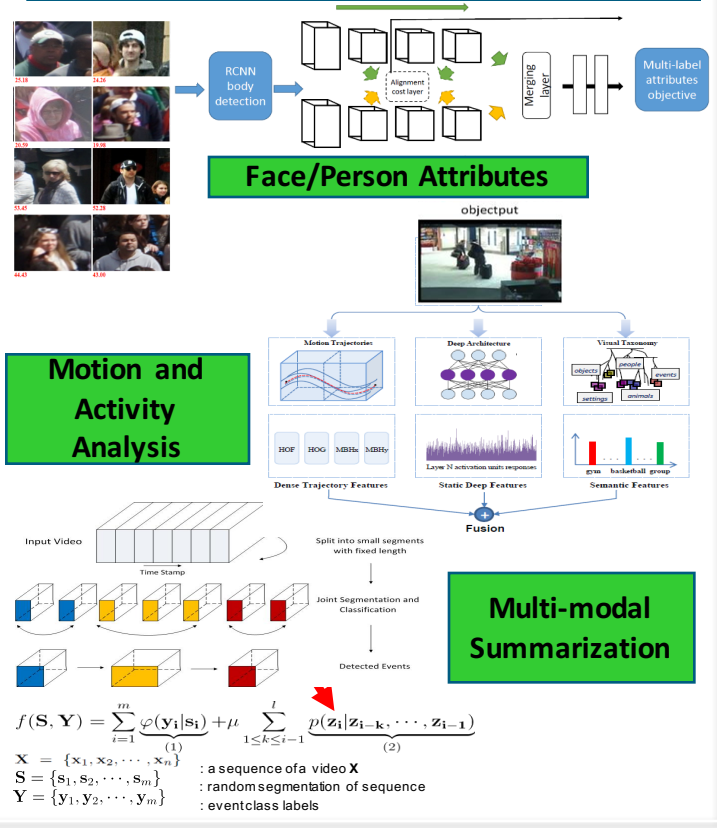
Intelligent Video Analytics (IVA)

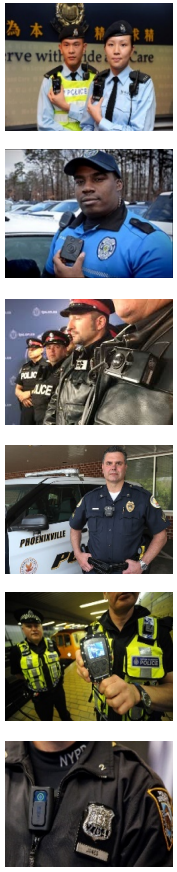
IBM Multimedia Analysis and Retrieval System (IMARS)



Future – Moving Cameras Analytics

Mobile and Body Worn Cameras





Cloud Video Analytics for Body-Worn Cameras

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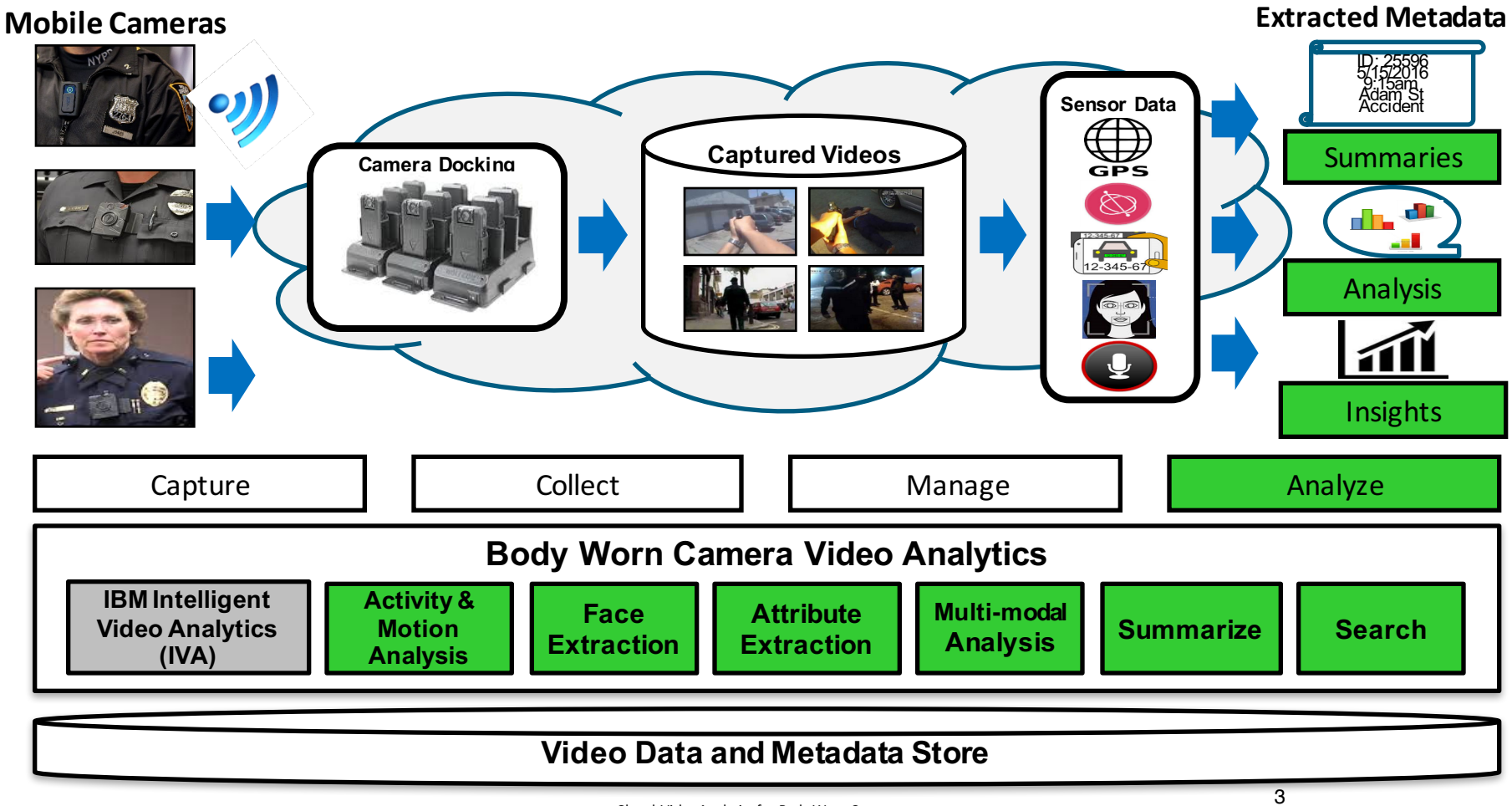
Cloud Video Analytics for Body-Worn Cameras for Law Enforcement



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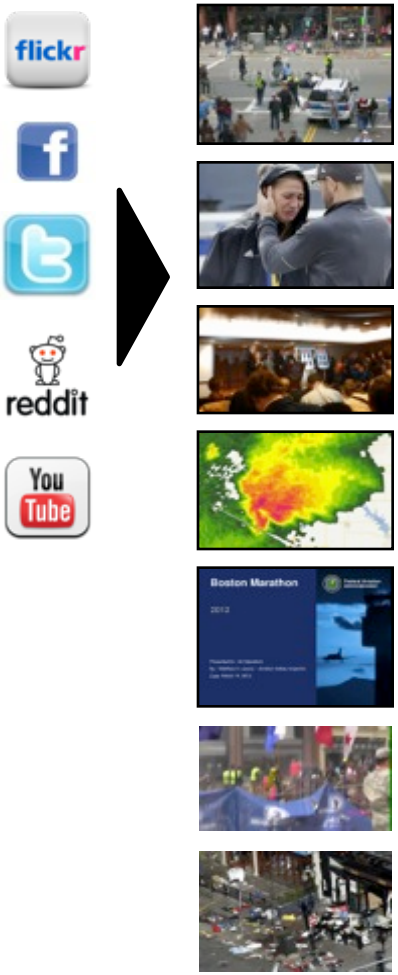
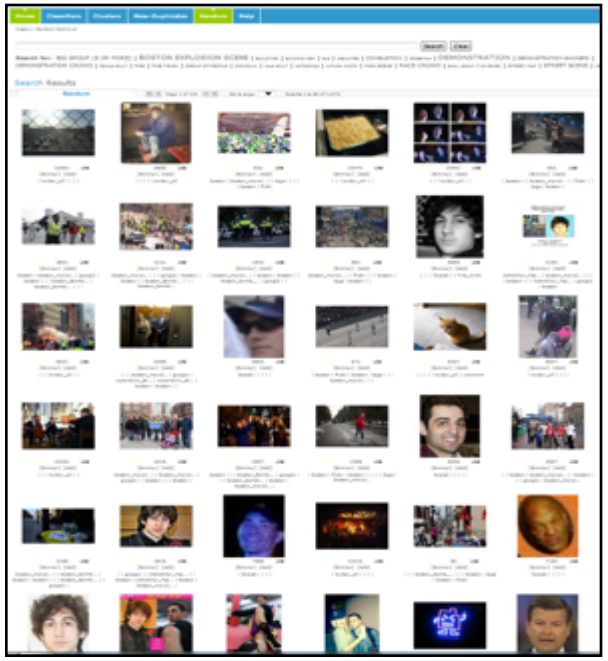
Beyond Urban Video Surveillance: Boston Marathon Example

Diverse Imagery



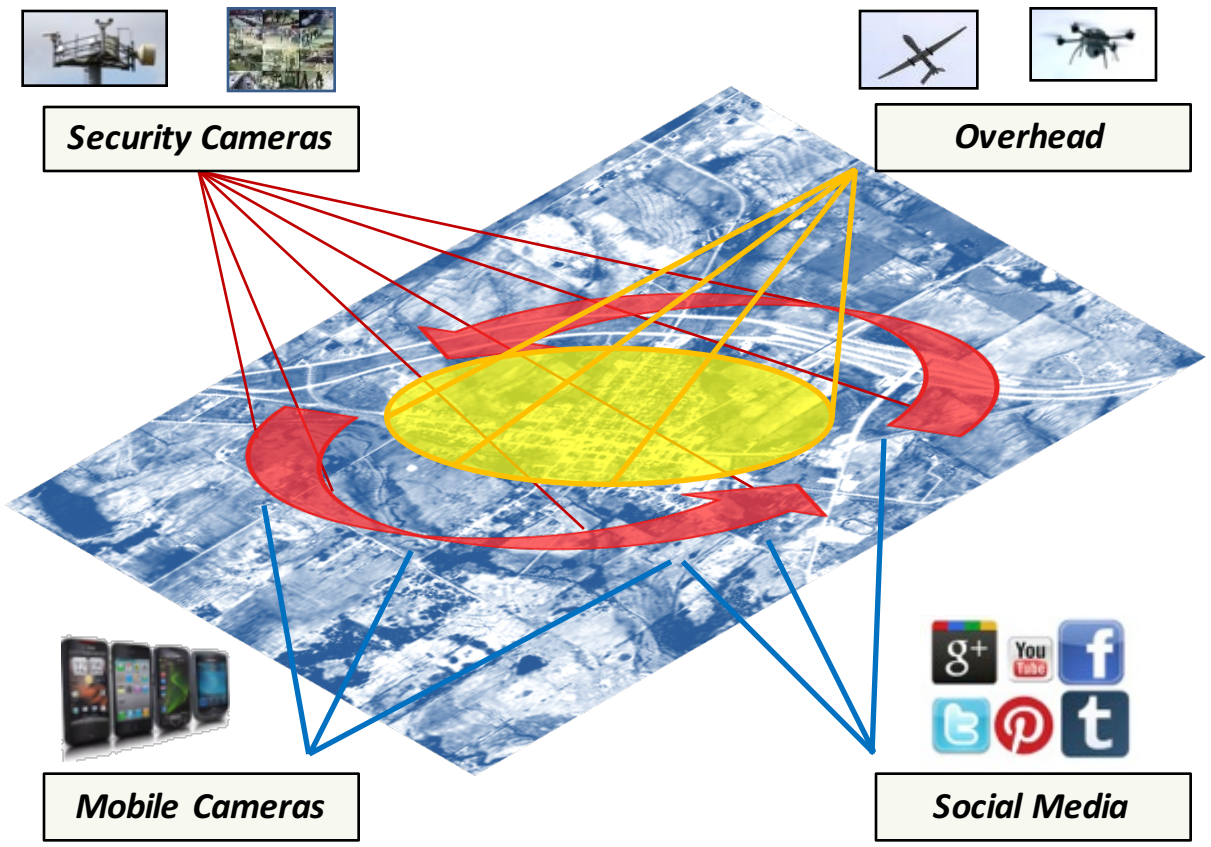
Triage and Analysis



- Rapid learning of targeted visual classifiers on-demand
- Automatic triage and indexing using large library of pre-learned semantic classifiers

Search and Discovery

Integrating Imagery from Diverse Sources Improves Insight Extraction



- Increasingly high spatial-, temporal- and semantic-density of image and video capture
- Improve extraction by linking content across data
- Learn across sources (e.g., transfer learning)
- Expand semantic-level extraction

Typical large city in 3-5 years:

- 100K security cameras (static cameras, slowly changing topology)
- 10M mobile photos/day (limited knowledge about locations)
- 50M social media photos/video (uncertain geo-temporal context)
- Moving vehicles (patrol cars), body worn cameras, overhead drones